AMBIENT LIGHT DETECTION AND DATA PROCESSING

TECHNOLOGICAL FIELD

[0001] Embodiments of the present invention relate to ambient light detection and data processing. In particular, they relate to ambient light detection and data processing in portable electronic devices.

BACKGROUND

[0002] A portable electronic device may comprise an ambient light sensor that is used to detect the illuminance of ambient light. The detected illuminance may, for example, be used to set the brightness of a display of the portable electronic device. Thus, if information provided by the ambient light sensor is incorrect or is interpreted incorrectly, the brightness of the display may be incorrectly set.

BRIEF SUMMARY

[0003] According to various, but not necessarily all, embodiments of the invention there is provided a method, comprising: determining an ambient light value from ambient light data provided by at least one ambient light sensor, in dependence upon the spectral distribution of the ambient light data provided by the at least one ambient light sensor and a manufacturer of the at least one ambient light sensor.

[0004] According to various, but not necessarily all, embodiments of the invention there is provided apparatus, comprising: at least one processor; and at least one memory storing computer program instructions configured, working with the at least one processor, to cause the apparatus to perform at least the following: determining an ambient light value from ambient light data provided by at least one ambient light sensor, in dependence upon the spectral distribution of the ambient light data provided by the at least one ambient light sensor and a manufacturer of the at least one ambient light sensor.

[0005] According to various, but not necessarily all, embodiments of the invention there is provided a non-transitory computer readable medium storing computer program instructions that, when performed by at least one processor, cause at least the following to be performed: determining an ambient light value from ambient light data provided by at least one ambient light sensor, in dependence upon the spectral distribution of the ambient light data provided by the at least one ambient light sensor and a manufacturer of the at least one ambient light sensor.

[0006] According to various, but not necessarily all, embodiments of the invention there is provided a method, comprising: determining an ambient light value by processing ambient light data provided by at least one ambient light sensor.

[0007] According to various, but not necessarily all, embodiments of the invention there is provided apparatus, comprising: at least one processor; and at least one memory storing computer program instructions configured, working with the at least one processor, to cause the apparatus to perform at least the following: determining an ambient light value by processing ambient light data provided by at least one ambient light sensor.

BRIEF DESCRIPTION

[0008] For a better understanding of various examples of embodiments of the present invention reference will now be made by way of example only to the accompanying drawings in which:

[0009] FIG. **1** illustrates an apparatus;

[0010] FIG. **2** illustrates a further apparatus;

[0011] FIG. **3** illustrates a method comprising determining an ambient light value;

[0012] FIG. **4** illustrates a method of determining the ambient light value;

[0013] FIG. **5** is a graph illustrating the spectral responses of two different ambient light sensors; and

[0014] FIG. **6** is a graph illustrating transmissivity versus light wavelength for two different infrared inks.

DETAILED DESCRIPTION

[0015] Data provided by an ambient light sensor can be used, for example, to control the brightness of a display by controlling display luminance, tone rendering curves and/or color profile, changing control parameters of infra-red (IR) based touch and/or proximity functionalities, and/or to set the white balance of a camera. If the data from the ambient light sensor is incorrect, it may cause an incorrect setting to be made.

[0016] In some circumstances it may be desirable, for business reasons, to acquire different ambient light sensors from different manufacturers/suppliers for a particular product (for example, a particular mobile telephone model). However, different ambient light sensors may have different responses to a given light source, which could cause different instances of the same product to operate differently in the presence of the same light source.

[0017] In embodiments of the invention, an ambient light value is determined from ambient light data provided by one or more ambient light sensors, in dependence upon the spectral distribution of the ambient light data provided by the ambient light sensor(s) and at least one property of the ambient light sensor(s). This advantageously enables suitably homogenized products to be produced.

[0018] The Figures illustrate apparatus **10**/**20**, comprising: at least one processor **12**; and at least one memory **14** storing computer program instructions **18** configured, working with the at least one processor **12**, to cause the apparatus **10**/**20** to perform at least the following: determining an ambient light value from ambient light data provided by at least one ambient light sensor **22**, in dependence upon the spectral distribution of the ambient light data provided by the at least one ambient light sensor **22** and a manufacturer of the at least one ambient light sensor **22**.

[0019] FIG. **1** illustrates a schematic of an apparatus **10** comprising at least one processor **12** and at least one memory **14**. The apparatus **10** may, for example, be a chip or a chipset. Although a single processor **12** and a single memory **14** are illustrated in FIG. **1**, in some implementations of the invention more than one processor **12** and/or more than one memory **14** is provided.

[0020] The processor **12** is configured to read from and write to the memory **14**. The processor **12** may also comprise an output interface via which data and/or commands are output by the processor **12** and an input interface via which data and/or commands are input to the processor **12**.